

10/05/99



JCS86 U.S. PTO

Practitioner's Docket No. 297-008927-US(PAR)

PATENT

A

Preliminary Classification:

Proposed Class:

Subclass:

NOTE: "All applicants are requested to include a preliminary classification on newly filed patent applications. The preliminary classification, preferably class and subclass designations, should be identified in the upper right-hand corner of the letter of transmittal accompanying the application papers, for example 'Proposed Class 2, subclass 129.'" M.P.E.P. § 601, 7th ed.

JCS11 U.S. PTO

09/412897



10/05/99

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Box Patent Application
Assistant Commissioner for Patents
Washington, D.C. 20231

NEW APPLICATION TRANSMITTAL

Transmitted herewith for filing is the patent application of

Inventor(s): Sverre SLOTTE, Arto KARPPANEN

WARNING: 37 C.F.R. § 1.41(a)(1) points out:

"(a) A patent is applied for in the name or names of the actual inventor or inventors.

"(1) The inventorship of a nonprovisional application is that inventorship set forth in the oath or declaration as prescribed by § 1.63, except as provided for in § 1.53(d)(4) and § 1.63(d). If an oath or declaration as prescribed by § 1.63 is not filed during the pendency of a nonprovisional application, the inventorship is that inventorship set forth in the application papers filed pursuant to § 1.53(b), unless a petition under this paragraph accompanied by the fee set forth in § 1.17(i) is filed supplying or changing the name or names of the inventor or inventors."

For (title): APPLICATIONS OF USER-TO-USER INFORMATION TRANSFER BETWEEN
TELECOMMUNICATION DEVICES

CERTIFICATION UNDER 37 C.F.R. § 1.10*

(Express Mail label number is mandatory.)

(Express Mail certification is optional.)

I hereby certify that this New Application Transmittal and the documents referred to as attached therein are being deposited with the United States Postal Service on this date October 5, 1999, in an envelope as "Express Mail Post Office to Addressee," mailing Label Number EI 336860852US, addressed to the: Assistant Commissioner for Patents, Washington, D.C. 20231.

Elaine Mian

(type or print name of person mailing paper)

Elaine Mian

Signature of person mailing paper

WARNING: Certificate of mailing (first class) or facsimile transmission procedures of 37 C.F.R. § 1.8 cannot be used to obtain a date of mailing or transmission for this correspondence.

*WARNING: Each paper or fee filed by "Express Mail" must have the number of the "Express Mail" mailing label placed thereon prior to mailing. 37 C.F.R. § 1.10(b).

"Since the filing of correspondence under § 1.10 without the Express Mail mailing label thereon is an oversight that can be avoided by the exercise of reasonable care, requests for waiver of this requirement will not be granted on petition." Notice of Oct. 24, 1996, 60 Fed. Reg. 56,439, at 56,442.

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09412897 100599

1. Type of Application

This new application is for a(n)

(check one applicable item below)

- ☒ Original (nonprovisional)
☐ Design
☐ Plant

WARNING: Do not use this transmittal for a completion in the U.S. of an International Application under 35 U.S.C. § 371(c)(4), unless the International Application is being filed as a divisional, continuation or continuation-in-part application.

WARNING: Do not use this transmittal for the filing of a provisional application.

NOTE: If one of the following 3 items apply, then complete and attach ADDED PAGES FOR NEW APPLICATION TRANSMITTAL WHERE BENEFIT OF A PRIOR U.S. APPLICATION CLAIMED and a NOTIFICATION IN PARENT APPLICATION OF THE FILING OF THIS CONTINUATION APPLICATION.

- ☐ Divisional.
☐ Continuation.
☐ Continuation-in-part (C-I-P).

2. Benefit of Prior U.S. Application(s) (35 U.S.C. §§ 119(e), 120, or 121)

NOTE: A nonprovisional application may claim an invention disclosed in one or more prior filed copending nonprovisional applications or copending international applications designating the United States of America. In order for a nonprovisional application to claim the benefit of a prior filed copending nonprovisional application or copending international application designating the United States of America, each prior application must name as an inventor at least one inventor named in the later filed nonprovisional application and disclose the named inventor's invention claimed in at least one claim of the later filed nonprovisional application in the manner provided by the first paragraph of 35 U.S.C. § 112. Each prior application must also be:

(i) An international application entitled to a filing date in accordance with PCT Article 11 and designating the United States of America; or

(ii) Complete as set forth in § 1.51(b); or

(iii) Entitled to a filing date as set forth in § 1.53(b) or § 1.53(d) and include the basic filing fee set forth in § 1.16; or

(iv) Entitled to a filing date as set forth in § 1.53(b) and have paid therein the processing and retention fee set forth in § 1.21(f) within the time period set forth in § 1.53(f).

37 C.F.R. § 1.78(a)(1).

NOTE: If the new application being transmitted is a divisional, continuation or a continuation-in-part of a parent case, or where the parent case is an International Application which designated the U.S., or benefit of a prior provisional application is claimed, then check the following item and complete and attach ADDED PAGES FOR NEW APPLICATION TRANSMITTAL WHERE BENEFIT OF PRIOR U.S. APPLICATION(S) CLAIMED.

WARNING: If an application claims the benefit of the filing date of an earlier filed application under 35 U.S.C. §§ 120, 121 or 365(c), the 20-year term of that application will be based upon the filing date of the earliest U.S. application that the application makes reference to under 35 U.S.C. §§ 120, 121 or 365(c). (35 U.S.C. § 154(a)(2) does not take into account, for the determination of the patent term, any application on which priority is claimed under 35 U.S.C. §§ 119, 365(a) or 365(b).) For a c-i-p application, applicant should review whether any claim in the patent that will issue is supported by an earlier application and, if not, the applicant should consider canceling the reference to the earlier filed application. The term of a patent is not based on a claim-by-claim approach. See Notice of April 14, 1995, 60 Fed. Reg. 20,195, at 20,205.

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WARNING: When the last day of pendency of a provisional application falls on a Saturday, Sunday, or Federal holiday within the District of Columbia, any nonprovisional application claiming benefit of the provisional application must be filed prior to the Saturday, Sunday, or Federal holiday within the District of Columbia. See 37 C.F.R. § 1.78(a)(3).

- ☐ The new application being transmitted claims the benefit of prior U.S. application(s). Enclosed are ADDED PAGES FOR NEW APPLICATION TRANSMITTAL WHERE BENEFIT OF PRIOR U.S. APPLICATION(S) CLAIMED.

3. Papers Enclosed

- A. Required for filing date under 37 C.F.R. § 1.53(b) (Regular) or 37 C.F.R. § 1.153 (Design) Application

8 Pages of specification

2 Pages of claims

2 Sheets of drawing

WARNING: DO NOT submit original drawings. A high quality copy of the drawings should be supplied when filing a patent application. The drawings that are submitted to the Office must be on strong, white, smooth, and non-shiny paper and meet the standards according to § 1.84. If corrections to the drawings are necessary, they should be made to the original drawing and a high-quality copy of the corrected original drawing then submitted to the Office. Only one copy is required or desired. For comments on proposed then-new 37 C.F.R. § 1.84, see Notice of March 9, 1988 (1990 O.G. 57-62).

NOTE: "Identifying Indicia, if provided, should include the application number or the title of the invention, inventor's name, docket number (if any), and the name and telephone number of a person to call if the Office is unable to match the drawings to the proper application. This information should be placed on the back of each sheet of drawing a minimum distance of 1.5 cm. (5/8 inch) down from the top of the page . . ." 37 C.F.R. § 1.84(c).

(complete the following, if applicable)

- ☐ The enclosed drawing(s) are photograph(s), and there is also attached a "PETITION TO ACCEPT PHOTOGRAPH(S) AS DRAWING(S)." 37 C.F.R. § 1.84(b).

☐ formal

☐ Informal

B. Other Papers Enclosed

6 Pages of declaration and power of attorney

1 Pages of abstract

 Other

4. Additional papers enclosed

- ☐ Amendment to claims

☐ Cancel in this applications claims _____ before calculating the filing fee. (At least one original independent claim must be retained for filing purposes.)

☐ Add the claims shown on the attached amendment. (Claims added have been numbered consecutively following the highest numbered original claims.)

☐ Preliminary Amendment

☒ Information Disclosure Statement (37 C.F.R. § 1.98)

☒ Form PTO-1449 (PTO/SB/08A and 08B)

☒ Citations

- ☐ Declaration of Biological Deposit
- ☐ Submission of "Sequence Listing," computer readable copy and/or amendment pertaining thereto for biotechnology invention containing nucleotide and/or amino acid sequence.
- ☐ Authorization of Attorney(s) to Accept and Follow Instructions from Representative
- ☐ Special Comments
- ☐ Other

5. Declaration or oath (including power of attorney)

NOTE: A newly executed declaration is not required in a continuation or divisional application provided that the prior nonprovisional application contained a declaration as required, the application being filed is by all or fewer than all the inventors named in the prior application, there is no new matter in the application being filed, and a copy of the executed declaration filed in the prior application (showing the signature or an indication thereon that it was signed) is submitted. The copy must be accompanied by a statement requesting deletion of the names of person(s) who are not inventors of the application being filed. If the declaration in the prior application was filed under § 1.47, then a copy of that declaration must be filed accompanied by a copy of the decision granting § 1.47 status or, if a nonsigning person under § 1.47 has subsequently joined in a prior application, then a copy of the subsequently executed declaration must be filed. See 37 C.F.R. §§ 1.63(d)(1)-(3).

NOTE: A declaration filed to complete an application must be executed, identify the specification to which it is directed, identify each inventor by full name including family name and at least one given name, without abbreviation together with any other given name or initial, and the residence, post office address and country or citizenship of each inventor, and state whether the inventor is a sole or joint inventor. 37 C.F.R. § 1.63(a)(1)-(4).

- ☒ Enclosed
Executed by

(check all applicable boxes)

- ☒ inventor(s).
- ☐ legal representative of inventor(s).
37 C.F.R. §§ 1.42 or 1.43.
- ☐ joint inventor or person showing a proprietary interest on behalf of inventor who refused to sign or cannot be reached.
 - ☐ This is the petition required by 37 C.F.R. § 1.47 and the statement required by 37 C.F.R. § 1.47 is also attached. See item 13 below for fee.

- ☐ Not Enclosed.

NOTE: Where the filing is a completion in the U.S. of an International Application or where the completion of the U.S. application contains subject matter in addition to the International Application, the application may be treated as a continuation or continuation-in-part, as the case may be, utilizing ADDED PAGE FOR NEW APPLICATION TRANSMITTAL WHERE BENEFIT OF PRIOR U.S. APPLICATION CLAIMED.

- ☐ Application is made by a person authorized under 37 C.F.R. § 1.41(c) on behalf of all the above named inventor(s).

(The declaration or oath, along with the surcharge required by 37 C.F.R. § 1.16(e) can be filed subsequently).

- ☐ Showing that the filing is authorized.
(not required unless called into question. 37 C.F.R. § 1.41(d))

6. Inventorship Statement

WARNING: If the named inventors are each not the inventors of all the claims an explanation, including the ownership of the various claims at the time the last claimed invention was made, should be submitted.

The inventorship for all the claims in this application are:

☐ The same.

or

☐ Not the same. An explanation, including the ownership of the various claims at the time the last claimed invention was made,

☐ is submitted.

☐ will be submitted.

7. Language

NOTE: An application including a signed oath or declaration may be filed in a language other than English. An English translation of the non-English language application and the processing fee of \$130.00 required by 37 C.F.R. § 1.17(k) is required to be filed with the application, or within such time as may be set by the Office. 37 C.F.R. § 1.52(d).

☒ English

☐ Non-English

☐ The attached translation includes a statement that the translation is accurate. 37 C.F.R. § 1.52(d).

8. Assignment

☒ An assignment of the invention to Nokia Mobile Phones Ltd.

☒ is attached. A separate ☒ "COVER SHEET FOR ASSIGNMENT (DOCUMENT) ACCOMPANYING NEW PATENT APPLICATION" or ☐ FORM PTO 1595 is also attached.

☐ will follow.

NOTE: "If an assignment is submitted with a new application, send two separate letters—one for the application and one for the assignment." Notice of May 4, 1990 (1114 O.G. 77-78).

WARNING: A newly executed "CERTIFICATE UNDER 37 C.F.R. § 3.73(b)" must be filed when a continuation-in-part application is filed by an assignee. Notice of April 30, 1993, 1150 O.G. 62-64.

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0442397 10633
655001/682460

9. Certified Copy

Certified copy(ies) of application(s)

Country	Appin. No.	Filed
Finland	982160	6 October 1998
Country	Appin. No.	Filed
Country	Appin. No.	Filed

from which priority is claimed

☒ Is (are) attached.

☐ will follow.

NOTE: The foreign application forming the basis for the claim for priority must be referred to in the oath or declaration. 37 C.F.R. § 1.55(a) and 1.63.

NOTE: This item is for any foreign priority for which the application being filed directly relates. If any parent U.S. application or International Application from which this application claims benefit under 35 U.S.C. § 120 is itself entitled to priority from a prior foreign application, then complete Item 18 on the ADDED PAGES FOR NEW APPLICATION TRANSMITTAL WHERE BENEFIT OF PRIOR U.S. APPLICATION(S) CLAIMED.

10. Fee Calculation (37 C.F.R. § 1.16)

A. ☒ Regular application

CLAIMS AS FILED				
Number filed	Number Extra	Rate	Basic Fee 37 C.F.R. § 1.16(a) \$760.00	
Total Claims (37 C.F.R. § 1.16(c))	6 - 20 =	0 × \$ 18.00	0	
Independent Claims (37 C.F.R. § 1.16(b))	2 - 3 =	0 × \$ 78.00	0	
Multiple dependent claim(s), If any (37 C.F.R. § 1.16(d))		+ \$260.00		

☐ Amendment cancelling extra claims is enclosed.

☐ Amendment deleting multiple-dependencies is enclosed.

☐ Fee for extra claims is not being paid at this time.

NOTE: If the fees for extra claims are not paid on filing they must be paid or the claims cancelled by amendment, prior to the expiration of the time period set for response by the Patent and Trademark Office in any notice of fee deficiency. 37 C.F.R. § 1.16(d).

Filing Fee Calculation

\$ 760.00

B. ☐ Design application

(\$310.00—37 C.F.R. § 1.16(f))

Filing Fee Calculation

\$

C. ☐ Plant application

(\$480.00—37 C.F.R. § 1.16(g))

Filing fee calculation

\$

11. Small Entity Statement(s)

- ☐ Statement(s) that this is a filing by a small entity under 37 C.F.R. § 1.9 and 1.27 is (are) attached.

WARNING: "Status as a small entity must be specifically established in each application or patent in which the status is available and desired. Status as a small entity in one application or patent does not affect any other application or patent, including applications or patents which are directly or indirectly dependent upon the application or patent in which the status has been established. The refiling of an application under § 1.53 as a continuation, division, or continuation-in-part (including a continued prosecution application under § 1.53(d)), or the filing of a reissue application requires a new determination as to continued entitlement to small entity status for the continuing or reissue application. A nonprovisional application claiming benefit under 35 U.S.C. § 119(e), 120, 121, or 365(c) of a prior application, or a reissue application may rely on a statement filed in the prior application or in the patent if the nonprovisional application or the reissue application includes a reference to the statement in the prior application or in the patent and status as a small entity is still proper and desired. The payment of the small entity basic statutory filing fee will be treated as such a reference for purposes of this section." 37 C.F.R. § 1.28(a)(2).

WARNING: "Small entity status must not be established when the person or persons signing the . . . statement can unequivocally make the required self-certification." M.P.E.P., § 509.03, 6th ed., rev. 2, July 1996 (emphasis added).

(complete the following, if applicable)

- ☐ Status as a small entity was claimed in prior application
_____ / _____, filed on _____, from which benefit
is being claimed for this application under:

35 U.S.C. § ☐ 119(e),
☐ 120,
☐ 121,
☐ 365(c),

and which status as a small entity is still proper and desired.

- ☐ A copy of the statement in the prior application is included.

Filing Fee Calculation (50% of A, B or C above)

\$ _____

NOTE: Any excess of the full fee paid will be refunded if small entity status is established and a refund request are filed within 2 months of the date of timely payment of a full fee. The two-month period is not extendable under § 1.136. 37 C.F.R. § 1.28(a).

12. Request for International-Type Search (37 C.F.R. § 1.104(d))

(complete, if applicable)

- ☐ Please prepare an international-type search report for this application at the time when national examination on the merits takes place.

13. Fee Payment Being Made at This Time

☐ Not Enclosed

☐ No filing fee is to be paid at this time.

(This and the surcharge required by 37 C.F.R. § 1.16(e) can be paid subsequently.)

☒ Enclosed

☒ Filing fee

\$ 760.00

☒ Recording assignment

(\$40.00; 37 C.F.R. § 1.21(h))

(See attached "COVER SHEET FOR
ASSIGNMENT ACCOMPANYING NEW
APPLICATION".)

\$ 40.00

☐ Petition fee for filing by other than all the
inventors or person on behalf of the inventor
where inventor refused to sign or cannot be
reached

(\$130.00; 37 C.F.R. §§ 1.47 and 1.17(i))

\$

☐ For processing an application with a
specification in
a non-English language

(\$130.00; 37 C.F.R. §§ 1.52(d) and 1.17(k))

\$

☐ Processing and retention fee

(\$130.00; 37 C.F.R. §§ 1.53(d) and 1.21(l))

\$

☐ Fee for international-type search report

(\$40.00; 37 C.F.R. § 1.21(e))

\$

NOTE: 37 C.F.R. § 1.21(f) establishes a fee for processing and retaining any application that is abandoned for failing to complete the application pursuant to 37 C.F.R. § 1.53(f) and this, as well as the changes to 37 C.F.R. §§ 1.53 and 1.78(a)(1), indicate that in order to obtain the benefit of a prior U.S. application, either the basic filing fee must be paid, or the processing and retention fee of § 1.21(f) must be paid, within 1 year from notification under § 53(f).

Total fees enclosed

\$ 800.00

14. Method of Payment of Fees

☒ Check in the amount of \$ 800.00

☐ Charge Account No. _____ in the amount of
\$ _____.

A duplicate of this transmittal is attached.

NOTE: Fees should be itemized in such a manner that it is clear for which purpose the fees are paid. 37 C.F.R. § 1.22(b).

15. Authorization to Charge Additional Fees

WARNING: If no fees are to be paid on filing, the following items should not be completed.

WARNING: Accurately count claims, especially multiple dependent claims, to avoid unexpected high charges, if extra claim charges are authorized.

- ☒ The Commissioner is hereby authorized to charge the following additional fees by this paper and during the entire pendency of this application to Account No. 16-1350:

☒ 37 C.F.R. § 1.16(a), (f) or (g) (filing fees)

☒ 37 C.F.R. § 1.16(b), (c) and (d) (presentation of extra claims)

NOTE: Because additional fees for excess or multiple dependent claims not paid on filing or on later presentation must only be paid or these claims cancelled by amendment prior to the expiration of the time period set for response by the PTO in any notice of fee deficiency (37 C.F.R. § 1.16(d)), it might be best not to authorize the PTO to charge additional claim fees, except possibly when dealing with amendments after final action.

☒ 37 C.F.R. § 1.16(e) (surcharge for filing the basic filing fee and/or declaration on a date later than the filing date of the application)

☒ 37 C.F.R. § 1.17(a)(1)–(5) (extension fees pursuant to § 1.136(a)).

☐ 37 C.F.R. § 1.17 (application processing fees)

NOTE: ". . . A written request may be submitted in an application that is an authorization to treat any concurrent or future reply, requiring a petition for an extension of time under this paragraph for its timely submission, as incorporating a petition for extension of time for the appropriate length of time. An authorization to charge all required fees, fees under § 1.17, or all required extension of time fees will be treated as a constructive petition for an extension of time in any concurrent or future reply requiring a petition for an extension of time under this paragraph for its timely submission. Submission of the fee set forth in § 1.17(a) will also be treated as a constructive petition for an extension of time in any concurrent reply requiring a petition for an extension of time under this paragraph for its timely submission." 37 C.F.R. § 1.136(a)(3).

☐ 37 C.F.R. § 1.18 (issue fee at or before mailing of Notice of Allowance, pursuant to 37 C.F.R. § 1.311(b))

NOTE: Where an authorization to charge the issue fee to a deposit account has been filed before the mailing of a Notice of Allowance, the issue fee will be automatically charged to the deposit account at the time of mailing the notice of allowance. 37 C.F.R. § 1.311(b).

NOTE: 37 C.F.R. § 1.28(b) requires "Notification of any change in status resulting in loss of entitlement to small entity status must be filed in the application . . . prior to paying, or at the time of paying, . . . the issue fee. . . ." From the wording of 37 C.F.R. § 1.28(b), (a) notification of change of status must be made even if the fee is paid as "other than a small entity" and (b) no notification is required if the change is to another small entity.

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16. Instructions as to Overpayment

NOTE: "... Amounts of twenty-five dollars or less will not be returned unless specifically requested within a reasonable time, nor will the payer be notified of such amounts; amounts over twenty-five dollars may be returned by check or, if requested, by credit to a deposit account." 37 C.F.R. § 1.26(a).

☒ Credit Account No. 16-1350

☐ Refund

SEND ALL CORRESPONDENCE TO:

Reg. No. 42,841

Tel. No. (203) 259-1800

Customer No.



SIGNATURE OF PRACTITIONER

Janik Marcovici

(type or print name of attorney)

PERMAN & GREEN, LLP

P.O. Address

425 Post Road, Fairfield, Connecticut 06430

665001 26321460

☐ **Incorporation by reference of added pages**

(check the following item if the application in this transmittal claims the benefit of prior U.S. application(s) (including an international application entering the U.S. stage as a continuation, divisional or C-I-P application) and complete and attach the ADDED PAGES FOR NEW APPLICATION TRANSMITTAL WHERE BENEFIT OF PRIOR U.S. APPLICATION(S) CLAIMED)

- ☐ Plus Added Pages for New Application Transmittal Where Benefit of Prior U.S. Application(s) Claimed

Number of pages added _____

- ☐ Plus Added Pages for Papers Referred to in Item 4 Above

Number of pages added _____

- ☐ Plus added pages deleting names of inventor(s) named in prior application(s) who is/are no longer inventor(s) of the subject matter claimed in this application.

Number of pages added _____

- ☐ Plus "Assignment Cover Letter Accompanying New Application"

Number of pages added _____

☒ **Statement Where No Further Pages Added**

(if no further pages form a part of this Transmittal, then end this Transmittal with this page and check the following item)

- ☒ This transmittal ends with this page.

09412897 10599

TITLE: Applications of user-to-user information transfer between telecommunication devices

5 **TECHNOLOGICAL FIELD**

The invention relates to the communication of information between telecommunication devices transparently through a network. Especially the invention concerns the applications of User-to-User Signalling (UUS).

10

BACKGROUND OF THE INVENTION

15 The term signalling generally refers to transmitting, from one telecommunication device to another, some information that relates more to the management of the communication connection than directly to the payload, like speech or data, for the transmission of which the communication connection between the devices has been established. For example in mobile telephony signalling is used to exchange measurement results, announcements, commands and short messages between a
20 mobile terminal and a base station, or between the different devices belonging to the fixed parts of the mobile telephone network.

User-to-User Signalling or UUS is a procedure recently disclosed as a supplementary service in some advanced telephone systems. Its intended use is the
25 transmission of a limited amount of subscriber generated information (UUI; User-to-User Information) to and/or from another user in association with a call between the users concerned. The nature of UUS dictates that the network that mediates the communication between the users does not interpret the UUI or act upon it in any way, i.e. it is passed "transparently" through the network. This patent application
30 will refer to the known aspects of UUS in the form in which they have been disclosed in the document "GSM 02.87: GSM Digital Cellular Telecommunications System (Phase 2+); User-to-User Signalling (UUS); Service Description, Stage 1, v.5.2.1", which has been published by ETSI (European Telecommunications Standards Institute) in November 1997 and which is incorporated herein by
35 reference. However, the invention is applicable in association with all current and future telecommunication systems which support user-to-user signalling in a form comparable to that described below.

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There are, at the time of filing this patent application, three subclasses of UUS, namely Service 1, Service 2 and Service 3. A user has access to these services as described in his/her subscription contract with the system operator. According to Service 1, UUI can be sent and received during call setup and termination by embedding UUI into the appropriate call control messages. Service 1 can be an implicit part of each call setup, whereby the user does not have to initiate the transmission of a UUS message separately, or it may be explicit in which case the user has to initiate an appropriate procedure. Service 2 encompasses the UUS messages that are sent and received after the calling party has received an indication that the called party has been informed of the call, but before the call is actually established. The network is not responsible for delivering a sent Service 2 message to its recipient before the call will be established. All such UUS messages that are sent and received during an established call connection belong to Service 3.

For example an ISDN system (Integrated Services Digital Network) allows as a network option the transfer of UUI with a maximum length of 32 octets for Service 1. The endpoints of a point-to-point connection where UUS is used may be mobile-to-mobile, mobile-to-PLMN (Public Land Mobile Network), mobile-to-ISDN network, mobile-to-ISDN terminal, or mobile-to-PSTN (Public Switched Telephone Network). If the other end is PLMN, ISDN network or ISDN terminal, it must be equipped with sufficient ISUP (ISDN Signalling User Part) signalling support known as such to the person skilled in the art. If the other end is PSTN, it must be equipped with sufficient inter-exchange ISUP signaling support known as such to the person skilled in the art.

The prior art publications disclose only a very limited number of actual applications for UUS. It is therefore an object of the invention to present a method and the necessary equipment for providing added value to a telephone connection by using specific applications of UUS.

SUMMARY OF THE INVENTION

The objects of the invention are achieved by presenting a certain inner structure for an UUS message, and associating certain information elements within UUS messages with the suggested use of the contents of a received UUS message.

It is characteristic to the method according to the invention that it comprises the steps of

- initiating a telephone connection between a transmitting telecommunication device and a receiving telecommunication device,
- 5 - composing, at said transmitting telecommunication device, a signalling message of predetermined form to be transmitted in association with the telephone connection, said signalling message containing additional information which is to complement the telephone connection,
- indicating, within said signalling message, the intended receiving part within said
- 10 receiving telecommunication device of at least part of said signalling message and
- transmitting said signalling message from said transmitting telecommunication device to said receiving telecommunication device.

The invention also applies to a telecommunication device for the transmission of signalling and payload information. It comprises a transceiver unit, a unit for processing received payload information, a unit for processing payload information to be transmitted, and a control block. The transceiver unit is arranged to direct received signalling information to the control block and to take signalling information to be transmitted from the control block. It is characteristic to the invention that it comprises a signalling unit arranged to compose a signalling message of predetermined form to be transmitted in association with a payload information transmission connection, and to indicate, within said signalling message, the intended receiving part within another telecommunication device of at least part of said signalling message.

25 The limited applicability of known UUS arises from the concept of using UUS only to transmit human-readable character strings from the transmitting user to the receiving user. For example in the known ISDN applications it is assumed that the receiving user has a terminal that contains a display so that it may reveal the contents of a received UUS message to the user in the form of a character string. However, even the present terminals include a large number of other functional blocks than the display, and it is expected that in the near future a large number of completely new terminal types will emerge, combining at least some of the features of a video telephone, portable telefax, palmtop computer, positioning device and

30 many other portable electronic devices previously known as separate units. Additionally the receiving device of an UUS message may be some other device in the network than a terminal.

According to the invention an inner structure is given to a UUS message, whereby specific parts of the message may be used to identify the intended target of the message within the receiving device and/or the intended use of the contents of the message. The message may contain a human-readable character string, a number of
 5 undisplayable and/or unreadable characters, a passage of binary code only intelligible to computers operating under a certain program or protocol, a digitised waveform or some other information of unlimited nature. The intended target of the message may be a display, a processor, a register or memory location, an application program, a loudspeaker or some other specified functional block, or the message
 10 may leave it to the discretion of the receiving device to direct the contents of the message to a suitable block.

BRIEF DESCRIPTION OF DRAWINGS

15 The novel features which are considered as characteristic of the invention are set forth in particular in the appended Claims. The invention itself, however, both as to its construction and its method of operation, together with additional objects and advantages thereof, will be best understood from the following description of
 20 specific embodiments when read in connection with the accompanying drawings.

Fig. 1 illustrates the concept of transmitting an UUS message,

25 Fig. 2 illustrates an advantageous inner structure of an UUS message according to the invention, and

Fig. 3 illustrates an advantageous terminal structure according to the invention.

30 DETAILED DESCRIPTION OF THE INVENTION

To facilitate full understanding of the invention we will first briefly refer to Fig. 1, where the terminal 101 of a first user is transmitting a UUS message to the terminal 102 of a second user. For the sake of example we may assume that terminal 101 is a
 35 mobile terminal resembling the known Nokia 9000 Communicator in a digital cellular radio system 103, and terminal 102 is a multifunctional office ISDN terminal comprising the known features of a desktop computer, telefax and telephone. In Fig. 1 it has been assumed that the cellular radio system 103 is GSM

network (Global System for Mobile telecommunications) and that there is a gateway connection 105 between it and the ISDN network 104. We may further assume that the user of terminal 101 has placed a telephone call to the user of terminal 102, so that the UUS message will be sent in association with said telephone call. For the purpose of this description it is not important, which of the Services 1, 2 or 3 of UUS is used.

According to known UUS, the user of terminal 101 should use a keyboard or corresponding input means for composing a character string which the terminal 101 would formulate into a UUS message. This conventional UUS message would consist of a Protocol Discriminator field and a data field comprising the composed character string. According to the known GSM specification number GSM 04.08 the Protocol Discriminator field would indicate the applicable protocol as "IA5 chars". The resulting message would then traverse the cellular radio system 103, go through the gateway 105 and follow the routing of the telephone call to the ISDN extension to which the terminal 102 is connected. After having received the UUS message terminal 102 would display the character string contained therein on a display.

According to the invention, terminal 101 may insert into a UUS message any kind of information that is possible to represent by bits. A character string typically consists of octets, where each octet is an eight-bit representation of a certain human-readable character. Standardised coding schemes like ASCII (American Standard Code for Information Interchange) are used to encode a character string into octets. The UUS message according to the invention may comprise characters encoded according to some other coding scheme that may be publicly known or even some secret scheme known only to the terminals 101 and 102. Most coding schemes that are used to handle machine-readable digital codes do not use the concept of a character, but consist e.g. of instructions, operators and values to be handled according to the instructions. Consequently the UUS message according to the invention may comprise a number of undisplayable and/or unreadable characters, a passage of binary code, a digitised waveform or some other information that has a representation in binary form.

The receiving terminal 102 may not be aware of what kind of information the transmitting terminal 101 wishes to transmit in a UUS message. One solution for providing the necessary information to the receiving terminal would be to set up a logical UUS link between the terminals, in the beginning of which a negotiation procedure would be used to fix the conditions for the following UUS message

exchange. Fig. 2 proposes an alternative solution, which does not require such a negotiation procedure. The exemplary UUS message 200 of Fig. 2 consists of a number of fields, of which a Protocol Discriminator (PD) field 201, a Data Coding Scheme (DCS) field 202, an Control Field Length Indicator (CFLI) field 203, three
 5 Control Fields (CF) 204, 205 and 206 as well as a data field 207 are shown. Of these, the PD and DCS fields together indicate, what kind of protocol and what kind of coding scheme have been used in the preparation of the message, and the CFLI field indicates the combined length of the header fields (all fields except the data field). The data field 207 is, as its name indicates, the field that contains the actual
 10 data for the transmission of which the UUS message has been composed.

The CF fields (which may also be called Information Element fields; IE), may be used to transmit several kinds of information like sequence numbering of several consecutive messages. However, a very specific use of the CF fields is closely
 15 associated with the broadening of the UUS application possibilities suggested by the present invention. Depending on the contents of the data field, the part of the receiving terminal that is supposed to handle or take advantage of the UUS message may vary. The CF fields are most advantageously used to transmit the identification of the functional block in the receiving device to which the UUS message is
 20 destined or the specific intended action that the receiving device is supposed to do and to which the contents of the UUS message are related.

If we apply the invention to the purpose of transmitting a displayable text message, which is the previously known application of UUS messages, the contents of the
 25 fields of Fig. 2 might be as follows.

PD field 201: a code identifying the conventional UUS text message transmission as the applicable protocol.

30 DCS field 202: a code identifying ASCII as the coding scheme.

CFLI field 203: a binary number indicating the combined length of the PD, DCS, CFLI and CF1 fields in octets.

35 CF1 204: a code identifying the display as the intended receiving functional block within the receiving device.

DATA 207: the text message as an ASCII character string.

It is easy to generalize the above-presented way of utilizing the fields for identifying an arbitrary protocol, coding scheme and intended receiving functional blocks or processes. The invention does not limit the selection of codes that are used to
 5 identify them. However, to avoid confusion, it is recommendable that a standard selection of codes will be established within or in association with an internationally recognised telecommunications standard.

It should be understood that the invention does not require the above-mentioned
 10 fields to appear in each and every UUS message. For example backward compatibility with previously known UUS schemes is easily provided by defining that if the contents of the PD field indicate "IA5 chars" as in a prior art UUS message, no other header or control fields are present in the message and it will be handled like a conventional UUS message (the contents of the data field
 15 immediately following the PD field are understood as a string of displayable characters). If the PD field indicates some other protocol, such receiving devices that do not support the indicated protocol simply handle the UUS message as a badly received (corrupted) UUS message, which typically means that they discard the message and do not take any further action.

20 Fig. 3 illustrates a simplified terminal structure 300 that is advantageously used for transmitting and/or receiving structured UUS messages according to the invention. The terminal is a telephone device and comprises a transceiver 301 for transmitting and receiving information over a physical link 302, which may as such be a radio
 25 link, a wireline connection, an infrared link or some other known physical link; the transceiver comprises the necessary means known as such for arranging for the information input at the TX lines to be transmitted over the physical link and information received over the physical link to be output at the RX lines. Connected to the TX and/or RX lines there are a speech recording unit 303, a speech
 30 reproduction unit 304 and a control block 305. The latter is additionally coupled to a display 306, a memory 307 and a keyboard 308. The receiver side of the transceiver 301 is arranged to separate received signalling (UUS along with all other signalling) from received speech frames and to direct signalling to the control block 305 and speech frames to the speech reproduction unit 304. Similarly the transmitter side of
 35 the transceiver 301 is arranged to take speech frames to be transmitted from the speech recording unit 303 and signalling to be transmitted from the control block 305.

Within the control block 305 there is a UUS unit 310 for transmitting and receiving UUS messages. The receiving side of the UUS unit is capable of identifying, from a received UUS message, the protocol and coding scheme that have been used for creating the message. Additionally the receiving side of the UUS unit is capable of
5 identifying, from the contents of the CF fields in a received UUS message, the functional block or process that is the intended recipient of the data part of the message. On the basis of the latter identification the UUS unit directs the data part of a received UUS message in a suitably decoded form to the correct functional block or process. The transmitting side of the UUS unit is capable of taking a piece
10 of information from the keyboard, from the other parts of the control block or from some other part of the terminal and formatting it into a UUS message to be transmitted. In the process of formatting the UUS message, the transmitting side of the UUS unit uses its knowledge about the appropriate codes for identifying a protocol, a coding scheme and an intended receiving functional block or process in
15 the device to which the UUS message is to be transmitted. The codes for identifying a protocol, a coding scheme and an intended receiving functional block or process are most advantageously stored in the memory 307 as a look-up table 311.

The functions represented as the UUS unit in Fig. 3 are most advantageously
20 implemented by programming them as an executable program for a microprocessor, which as such is within the capabilities of a person skilled in the art.

The invention has been described above solely with reference to the UUS specifications as they appear in the appropriate standards mentioned in the
25 description of prior art. However, the invention is equally well applicable to other systems where short messages are used in association with telephone or dataphone connections to transmit call-related information between two endpoints without the network between them reacting on the messages in any other way than by providing the means for their transmission.

CLAIMS

1. A method for complementing a telephone connection with additional information, comprising the steps of
 - initiating the telephone connection between a transmitting telecommunication device and a receiving telecommunication device,
 - composing, at said transmitting telecommunication device, a signalling message of predetermined form to be transmitted in association with the telephone connection, said signalling message containing the additional information,
 - indicating, within said signalling message, the intended receiving part within said receiving telecommunication device of at least part of said signalling message and
 - transmitting said signalling message from said transmitting telecommunication device to said receiving telecommunication device.
2. A method according to claim 1, additionally comprising the step of indicating, within said signalling message, a certain protocol used in the creation of said signalling message.
3. A method according to claim 1, additionally comprising the step of indicating, within said signalling message, a certain coding scheme used in the creation of said signalling message.
4. A method according to claim 1, additionally comprising the steps of
 - composing said signalling message from a number of header fields and a data field and
 - indicating, within said signalling message, the combined length of said header fields.
5. A telecommunication device for the transmission of signalling and payload information, comprising
 - a transceiver unit,
 - a unit for processing received payload information,
 - a unit for processing payload information to be transmitted,
 - a control block, and
 - a signalling unit;
 of which said transceiver unit is arranged to direct received signalling information to the control block and to take signalling information to be transmitted from the control block, and said signalling unit is arranged to compose a signalling message of predetermined form to be transmitted in association with a payload information

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transmission connection, and to indicate, within said signalling message, the intended receiving part within another telecommunication device of at least part of said signalling message.

- 5 6. A telecommunication device according to claim 5, wherein said signalling unit
is additionally arranged to receive a signalling message from another
telecommunication device in association with a payload information transmission
connection, and to direct at least part of the received signalling message to a certain
functional block within the telecommunication device according to an indication
10 contained in the received signalling message.

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ABSTRACT

A telephone connection is complemented with additional information by, after initiating the telephone connection between a transmitting telecommunication device and a receiving telecommunication device, composing, at said transmitting telecommunication device, a signalling message (200) of predetermined form to be transmitted in association with the telephone connection. Said signalling message contains the additional information (207). Within said signalling message there is indicated (204, 205, 206) the intended receiving part within said receiving telecommunication device of at least part of said signalling message. The signalling message is transmitted from said transmitting telecommunication device to said receiving telecommunication device.

Fig. 2

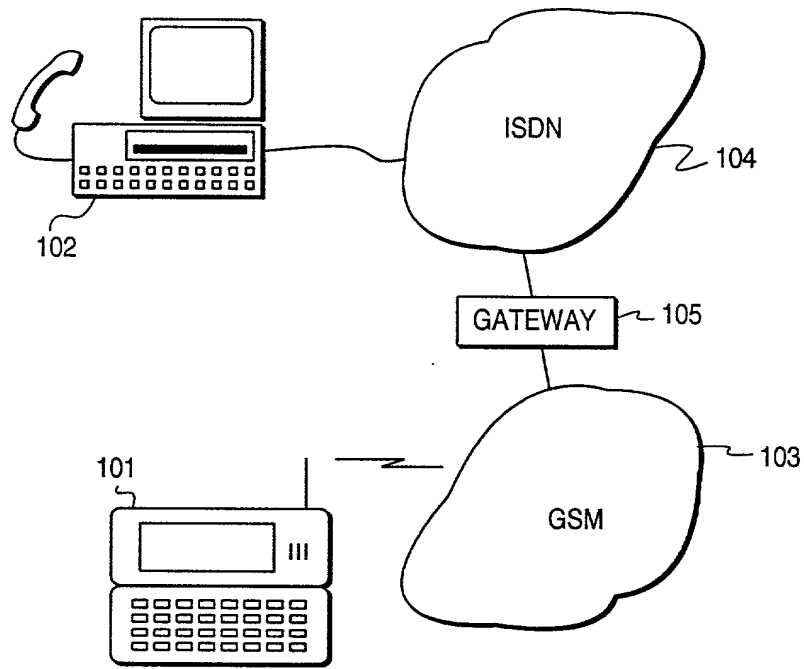


Fig. 1

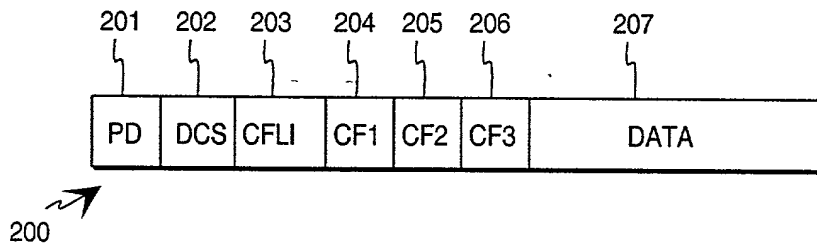


Fig. 2

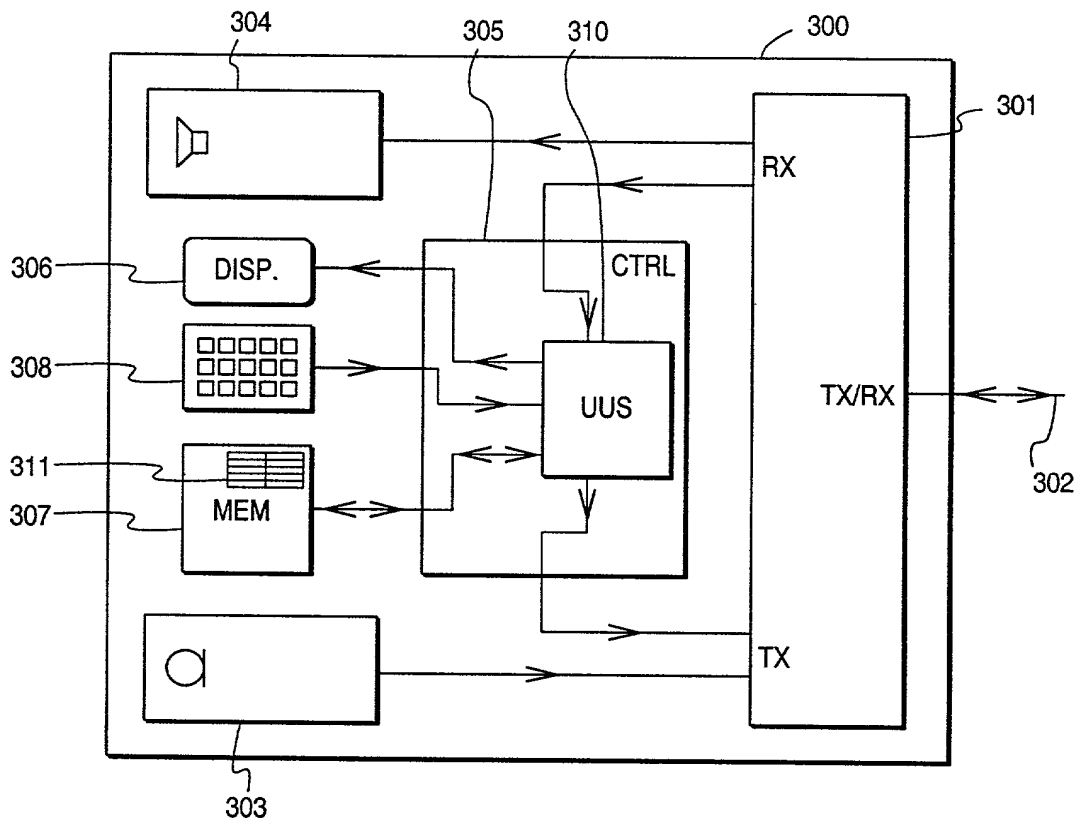


Fig. 3

Attorney's Docket No. _____

PATENT

COMBINED DECLARATION AND POWER OF ATTORNEY
(ORIGINAL, DESIGN, NATIONAL STAGE OF PCT, SUPPLEMENTAL, DIVISIONAL,
CONTINUATION OR C-I-P)

As a below named inventor, I hereby declare that:

TYPE OF DECLARATION

This declaration is of the following type:

(check one applicable item below)

- ☒ original.
☐ design.
☐ supplemental.

NOTE: If the declaration is for an International Application being filed as a divisional, continuation or continuation-in-part application, do not check next item; check appropriate one of last three items.

- ☐ national stage of PCT.

NOTE: If one of the following 3 items apply, then complete and also attach ADDED PAGES FOR DIVISIONAL, CONTINUATION OR C-I-P.

- ☐ divisional.
☐ continuation.
☐ continuation-in-part (C-I-P).

INVENTORSHIP IDENTIFICATION

WARNING: If the inventors are each not the inventors of all the claims, an explanation of the facts, including the ownership of all the claims at the time the last claimed invention was made, should be submitted.

My residence, post office address and citizenship are as stated below, next to my name. I believe that I am the original, first and sole inventor (*if only one name is listed below*) or an original, first and joint inventor (*if plural names are listed below*) of the subject matter that is claimed, and for which a patent is sought on the invention entitled:

TITLE OF INVENTION

Applications of user-to-user information transfer between telecommunication
devices

66500T 2632460

SPECIFICATION IDENTIFICATION

the specification of which:

(complete (a), (b) or (c))

(a) ☒ is attached hereto.

(b) ☐ was filed on _____, as ☐ Serial No. _____
or ☐ Express Mail No., as Serial No. not yet known _____
and was amended on _____ (if applicable).

NOTE. Amendments filed after the original papers are deposited with the PTO that contain new matter are not accorded a filing date by being referred to in the declaration. Accordingly, the amendments involved are those filed with the application papers or, in the case of a supplemental declaration, are those amendments claiming matter not encompassed in the original statement of invention or claims. See 37 CFR 1.67.

(c) ☐ was described and claimed in PCT International Application No. _____,
filed on _____ and as amended under PCT Article 19 on
_____ (if any).

ACKNOWLEDGEMENT OF REVIEW OF PAPERS AND DUTY OF CANDOR

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information, which is material to patentability as defined in 37, Code of Federal Regulations, § 1.56,

(also check the following items, if desired)

☒ and which is material to the examination of this application, namely, information where there is a substantial likelihood that a reasonable Examiner would consider it important in deciding whether to allow the application to issue as a patent, and

☒ in compliance with this duty, there is attached an information disclosure statement, in accordance with 37 CFR 1.98.

PRIORITY CLAIM (35 U.S.C. § 119(a)-(d))

I hereby claim foreign priority benefits under Title 35, United States Code, § 119(a)-(d) of any foreign application(s) for patent or inventor's certificate or of any PCT international application(s) designating at least one country other than the United States of America listed below and have also identified below any foreign application(s) for patent or inventor's certificate or any PCT international application(s) designating at least one country other than the United States of America filed by me on the same subject matter having a filing date before that of the application(s) of which priority is claimed.

(complete (d) or (e))

(d) ☐ no such applications have been filed.

(e) ☒ such applications have been filed as follows.

NOTE. Where item (c) is entered above and the International Application which designated the U.S. itself claimed priority check item (e), enter the details below and make the priority claim.

00442397 10599
665001 2632160

**PRIOR FOREIGN/PCT APPLICATION(S) FILED WITHIN 12 MONTHS
(6 MONTHS FOR DESIGN) PRIOR TO THIS APPLICATION
AND ANY PRIORITY CLAIMS UNDER 35 U.S.C. § 119(a)-(d)**

COUNTRY(OR INDICATE IF PCT)	APPLICATION NUMBER	DATE OF FILING (day, month, year)	PRIORITY CLAIMED UNDER 37 USC 119
FINLAND	982160	6 October 1998	<input checked="" type="checkbox"/> YES NO__
			__ YES NO__
			__ YES NO__
			__ YES NO__
			__ YES NO__

**CLAIM FOR BENEFIT OF PRIOR U.S. PROVISIONAL APPLICATION(S)
(34 U.S.C. § 119(e))**

I hereby claim the benefit under Title 35, United States Code, § 119(e) of any United States provisional application(s) listed below:

PROVISIONAL APPLICATION NUMBER

FILING DATE

**CLAIM FOR BENEFIT OF EARLIER US/PCT APPLICATION(S)
UNDER 35 U.S.C. 120**

__ The claim for the benefit of any such applications are set forth in the attached
ADDED PAGES TO COMBINED DECLARATION AND POWER OF
ATTORNEY FOR DIVISIONAL, CONTINUATION OR CONTINUATION-IN-
PART (C-I-P) APPLICATION.

**ALL FOREIGN APPLICATION(S), IF ANY, FILED MORE THAN 12 MONTHS
(6 MONTHS FOR DESIGN) PRIOR TO THIS U.S. APPLICATION**

NOTE If the application filed more than 12 months from the filing date of this application is a PCT filing forming the basis for this application entering the United States as (1) the national stage, or (2) a continuation, divisional, or continuation-in-part, then also complete **ADDED PAGES TO COMBINED DECLARATION AND POWER OF ATTORNEY FOR DIVISIONAL, CONTINUATION OR C-I-P APPLICATION** for benefit of the prior U.S. or PCT application(s) under 35 U.S.C. § 120

POWER OF ATTORNEY

I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith.

(list name and registration number)

Clarence A. Green	(24,622)
Harry F. Smith	(32,493)
Mark F. Harrington	(31,686)

(check the following item, if applicable)

☐ Attached, as part of this declaration and power of attorney, is the authorization of the above-named attorney(s) to accept and follow instructions from my representative(s).

SEND CORRESPONDENCE TO

Clarence A. Green
Perman & Green
425 Post Road
Fairfield, Ct 06430

DIRECT TELEPHONE CALLS TO:
(Name and telephone number)

Clarence A. Green
203-259-1800

DECLARATION

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that wilful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such wilful false statements may jeopardize the validity of the application or any patent issued thereon.

065001 2682160

SIGNATURE(S)

NOTE: Carefully indicate the family (or last) name, as it should appear on the filing receipt and all other documents.

Full name of sole or first inventor:

Given name: Sverre

Middle initial or name:

Family (or last name): SLOTTE

Inventor's signature: 

Date: 28 September 1999

Country of Citizenship: Finland

Residence: Granbackagränden 4 E 33, FIN-02210 ESBO, Finland

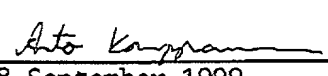
Post Office Address: Granbackagränden 4 E 33, FIN-02210 ESBO, Finland

Full name of second joint inventor, if any:

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Middle initial or name:

Family (or last name): KARPPANEN

Inventor's signature: 

Date: 28 September 1999

Country of Citizenship: Finland

Residence: Vattuniemenkatu 4 D 64, FIN-00210 HELSINKI, Finland

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Full name of third joint inventor, if any:

Given name:

Middle initial or name:

Family (or last name):

Inventor's signature: _____

Date: _____

Country of Citizenship: _____

Residence: _____

Post Office Address: _____

Full name of fourth joint inventor, if any:

Given name:

Middle initial or name:

Family (or last name):

Inventor's signature: _____

Date: _____

Country of Citizenship: _____

Residence: _____

Post Office Address: _____

(check proper box(es) for any of the following added page(s)
that form a part of this declaration)

___ **Signature** for fifth and subsequent joint inventors. *Number of pages added* _____.

* * *

___ **Signature** by administrator(trix), executor(trix) or legal representative for deceased or incapacitated inventor. *Number of pages added* _____.

* * *

___ **Signature** for inventor who refuses to sign or cannot be reached by person authorized under 37 CFR 1.47. *Number of pages added* _____.

* * *

___ Added page for **signature** by one joint inventor on behalf of deceased inventor(s) where legal representative cannot be appointed in time. (37 CFR 1.47)

* * *

___ Added pages to combined declaration and power of attorney for divisional, continuation, or continuation-in-part (C-I-P) application.

___ Number of pages added _____

* * *

___ Authorization of attorney(s) to accept and follow instructions from representative.

* * *

(if no further pages form a part of this Declaration,
then end this Declaration with this page and check the following item)

X This declaration ends with this page.